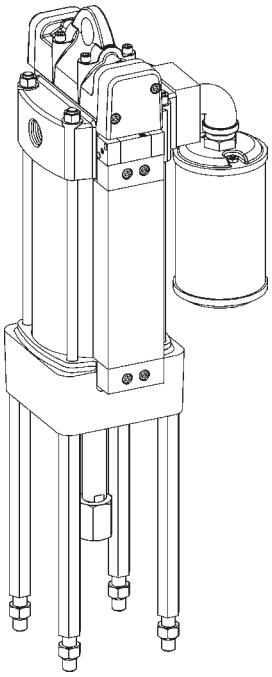
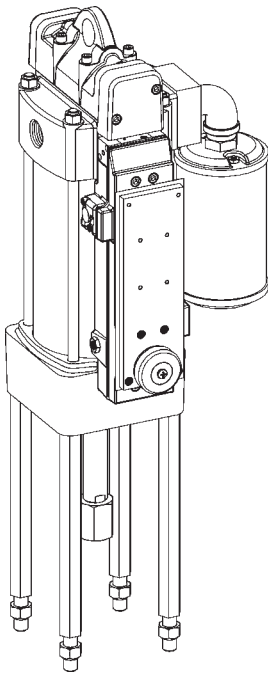
LOCTITE®

EQUIPMENT
Operation Manual AC988557





Loctite® Airmotors
Part Numbers
988526 (4-1/4" Airmotor)
988528 (6" Airmotor)
988545 (Pump Stop)
988552 (Low Level Micro Switch)

IT IS THE RESPONSIBILITY OF THE OWNER AND/OR OPERATOR TO PROPERLY USE AND MAINTAIN THIS EQUIPMENT. CAREFULLY READ AND UNDERSTAND THE INSTRUCTIONS AND WARNINGS IN THIS MANUAL BEFORE OPERATING THIS EQUIPMENT.

If the operator is not fluent in English, the instructions and warnings shall be read and discussed in the operator's native language, making sure the operator comprehends the contents.

This equipment complies with OSHA Standards where applicable.

⚠ WARNING

DO NOT exceed the stated maximum working pressure of the airmotor or of the lowest rated component in your system.

DO NOT alter or modify any part of this equipment.

DO NOT operate this equipment with combustible gas.

DO NOT attempt to repair or disassemble the equipment while the system is pressurized.

TIGHTEN all fluid connections securely before using this equipment.

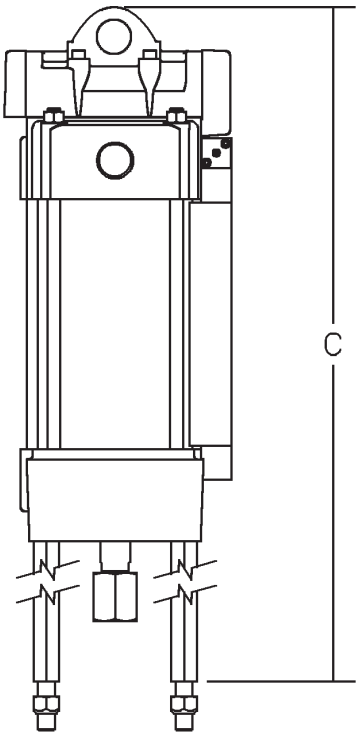
ALWAYS read and follow the fluid manufacturer's recommendations regarding fluid compatibility, and the use of protective clothing and equipment.

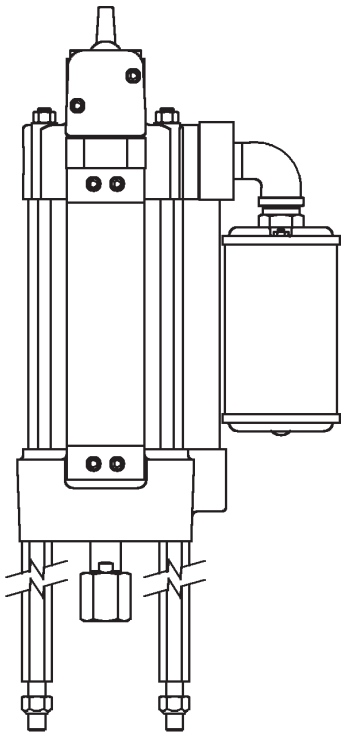
CHECK all equipment regularly and repair or replace worn or damaged parts immediately.

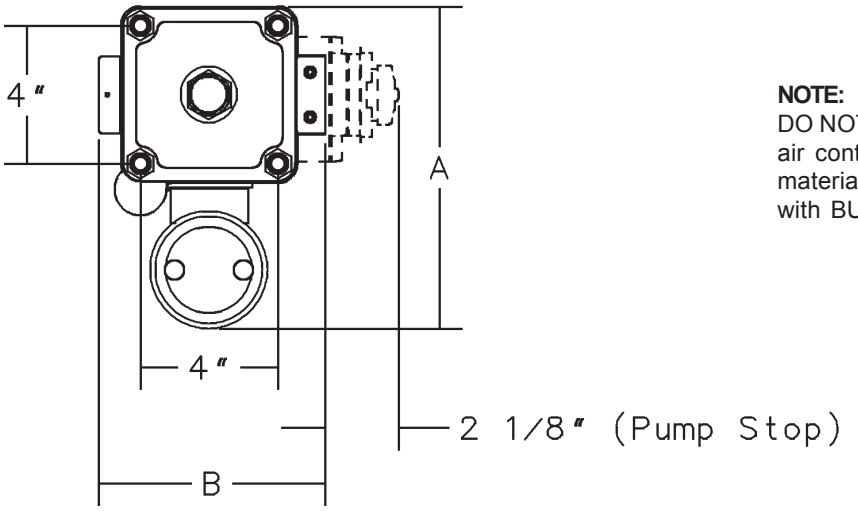
IMPORTANT: Failure to heed these warnings including misuse, overpressurizing, modifying parts, using incompatible chemicals and fluids, or using worn or damaged parts, may result in equipment damage and/or serious personal injury, fire, explosion, or property damage.

This manual contains IMPORTANT WARNINGS and INSTRUCTIONS. READ AND RETAIN FOR REFERENCE.

Henkel Technologies







NOTE:
DO NOT OPERATE with air contaminated with materials not compatible with BUNA-N seals.

SPECIFICATIONS

ITEM #	CYLINDER DIAMETER IN. (MM)	EFFECTIVE PISTON AREA IN^2 (CM^2)	OPERATING PRESSURE RANGE PSIG (BAR)	OPERATING TEMP. RANGE °F (°C)	MIN. ID. OF AIR SUPPLY IN. (MM)	AIR INLET	AIR CONS. @ 100 PSIG (7 BAR) SCF/CYCLE (L(N)/CYCLE)
988528	6 (152)	28 (182)	30-100 (2-7)	-30 +200	1/2 (12)	3/4" NPTF	1.6 (46)
988526	4-1/4 (108)	14 (92)	30-100 (2-14)	(-34 +93)	1/2 (12)	1/2" NPTF	1.1 (32)
ITEM #	**MAX. RECOM. SPEED CPM**	**STROKE LENGTH IN. (MM)**	**WEIGHT LB. (KG)**	**SEALS MATERIAL**	**DIM. A IN. (MM)**	**DIM. B IN. (MM)**	**DIM. C IN. (MM)**
988528	75	6 (152)	34 (15.5)	BUNA-N and	11-1/8 (283)	7-3/4 (197)	22-3/4 (577)
988526			26(11.7)	*TEFLON	9-3/8 (238)	6-5/8 (168)	23-5/8 (599)

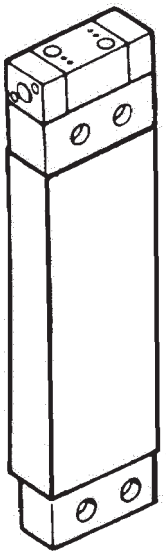
*TEFLON® Seals used with Power Valve Spool (Item 13) and Relay Valve (Item 17).

FOR STANDARD AIRMOTOR WITHOUT PUMP STOP

SERVICE ASSEMBLIES & KITS

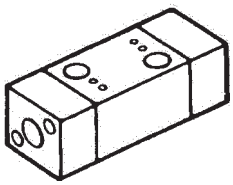
To reduce down-time and take advantage of the modular design of the airmotor, Henkel recommends using the following Service Assemblies for repair of the airmotor. After removal, the faulty assembly can then be repaired using the corresponding Soft Parts Kit.

1. Pilot Bar Subassembly
   P/N 988747

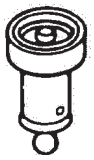


2. Soft Parts Kit P/N 988746 for repair of Pilot Bar Subassemblies listed above. (Includes all necessary “O”-rings.)

3. Relay Valve. P/N 988748

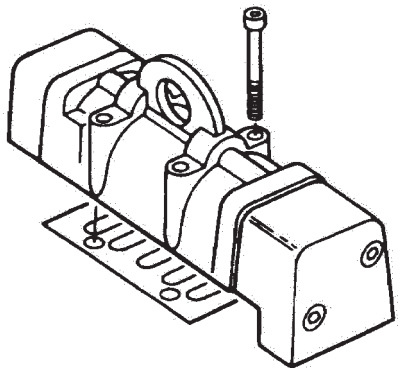


4. Air Signal Valve P/N 988749



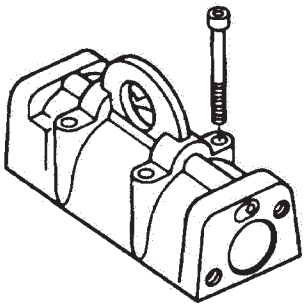
5. Cylinder Tube Soft Parts Kit
   (Includes all “O”-rings, piston seal. etc.)
   P/N 988753 (6” Airmotor)
   P/N 988752 (4-1/4” Airmotor)

6. Power Valve Subassembly
   P/N AC244806 (6” Airmotor)
   P/N AC244808 (4-1/4” Airmotor)



7. Soft Parts Kit P/N 988751 for repair of Power Valve Subassemblies listed above.

8. Power Valve Spool & Body P/N 988750



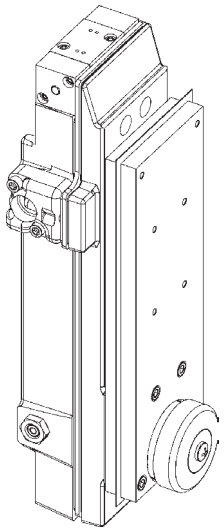
IMPORTANT: When replacing soft parts, replace all parts included in the soft parts kit.

FOR AIRMOTORS WITH PUMP STOP

SERVICE ASSEMBLIES & KITS

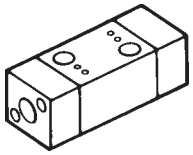
To reduce down-time and take advantage of the modular design of the airmotor, Henkel recommends using the following Service Assemblies for repair of the airmotor. After removal, the faulty assembly can then be repaired using the corresponding Soft Parts Kit.

1. Pump Stop Subassembly P/N 988545

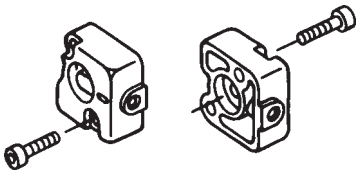


2. Soft Parts Kit P/N 988746 for repair of Pump Stop Subassembly. (See Parts List for contents.)

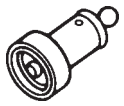
3. Relay Valve P/N 988748 Item 17



4. Signal Valve Cap Kit P/N AC243853 Item 31 (includes Item 32)

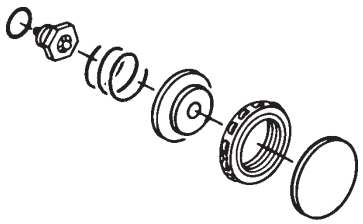


5. Air Signal Valve P/N 988749, Item 20

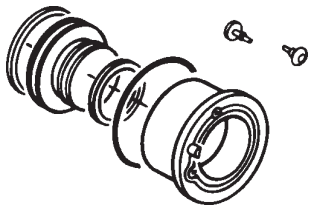


6. Trip Indicator P/N AC243852 Item 48

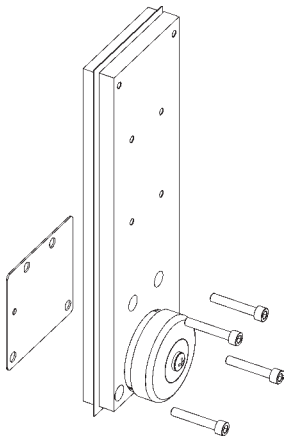
7. Stop Valve Repair Kit P/N AC 244091 Item 91 (includes items 57, 58, 59, 60, 61)



8. Air Pump Repair Kit P/N AC244092 Item 92 (includes items 55, 56, 62, 63, 64, 65)

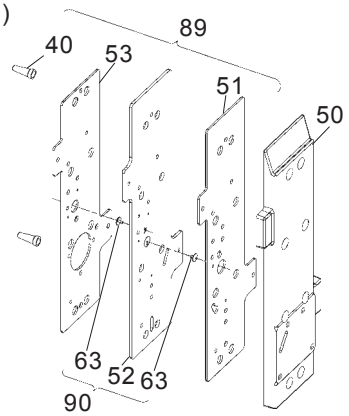


9. Bleed Assembly P/N AC273428 Item 67 (includes items 73 through 88)



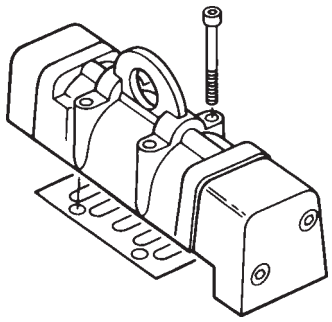
10. Gasket and Air Filter Kit Item 89 P/N AC273427 (Items 40, 51 & 53)

11. Gasket Plate with Check Valves Item 90 P/N AC244093 (Items 52 & 63)



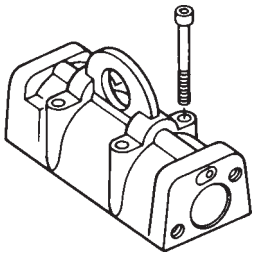
12. Cylinder Tube Soft Parts Kit (Includes “O”-rings, piston seal, etc.) P/N 988753 (6" Airmotor) P/N 988752 (4-1/4"Airmotor)

13. Power Valve Subassembly P/N AC244806 (6" Airmotor) P/N AC244808 (4-1/4" Airmotor)



14. Soft Parts Kit P/N 988751 for repair of Power Valve Subassemblies listed above.

15. Power Valve Spool & Body P/N 988750.



FOR STANDARD AIRMOTOR

⚠ WARNING

ALWAYS check equipment for proper operation before each use, making sure safety devices are in place and operating properly. DO NOT alter or modify any part of the equipment as this may cause a malfunction and result in serious bodily injury.

BEFORE CONNECTING AIRMOTOR TO AIR LINE

LOCTITE® AIRMOTORS are fully pneumatic and require a minimum specified size of air supply hose for proper operation. Check specification for minimum ID. of the air supply hose and select corresponding sizes of air controls and accessories for non-restrictive air flow.

If quick disconnect coupling should be used, install supplied coupler to insure proper airmotor operation.

NOTE: Whenever flammable materials are pumped, ground Airmotor according to Local Codes.

OPERATING PRECAUTIONS

Use Loctite® replacement parts to assure compatible pressure rating.

Heed ALL warnings.

DO NOT OPERATE Airmotor in excess of recommended pressure range.

Disconnect air line and relieve (vent) pressure when Airmotor sits idle for long periods of time and before servicing.

⚠ WARNING

ALWAYS read and follow the fluid and solvent manufacturer's recommendations regarding the use of protective clothing and equipment.

⚠ WARNING

To reduce the risk of serious bodily injury or property damage. NEVER exceed the maximum air or fluid working pressure of the lowest rated system component.

ATTACHING AIRMOTOR TO PUMPTUBE

1 Tightly attach the tie rods (Item 41) to the Airmotor lower casting. Use short threaded end of tie rods.
2. Mount Airmotor on top of pump tube outlet and tightly connect pump tube coupling nut to Airmotor Piston Rod (Item 5).
3. Hand tighten tie rods to the pump tube with four nuts (Item 42) supplied with Airmotor.
4. Connect air supply and slowly cycle pump several times using only enough air pressure to operate pump without stalling.
5. STOP pump on "UP" stroke and tighten four nuts to securely fasten Airmotor to pump tube.

SERVICE AND DISASSEMBLY PROCEDURE

⚠ WARNING

Always disconnect air supply to Airmotor and relieve pressure before checking, servicing, or repairing any part of Airmotor

TOOLS REQUIRED

1. 7/64 (.109) Hex Wrench
2. 5/32 (.156) Hex Wrench
3. 3/16 (.189) Hex Wrench
4. 3/4 (.750) Open End Wrench (for 6" Airmotor)
5. 1/2" (.500) Open End Wrench (for 4-1/4" Airmotor)
6. Pliers

The modular design of the Airmotor and accessibility of vital operation parts make service available without taking Airmotor out of line or without complete disassembly.

Power Valve

1. Remove four screws (Items 27 & 34) with 3/16" hex wrench (2 on each side).
2. Remove End Caps (Items 10 & 14).
3. Push out Valve Spool (Item 13).
4. Remove Spool Bumpers (Item 9) (One from each end).
5. Remove "O" Ring (Item 11) (One from each end of valve body).
6. Remove four Screws (Item 37) with 3/16" hex wrench and lift valve body (Item 12).
7. Remove Gasket (Item 15) to complete valve disassembly.
8. To REASSEMBLE, REVERSE procedure.

Pilot Bar Subassembly

1. Remove four Screws (Item 23)(two on each end) with 3/16" hex wrench and pull out Pilot Bar Subassembly.
2. Remove two Screws (Item 39), with 7/64" hex wrench and lift out Valve Body (Item 17).
3. Remove four Screws (Item 40)(two on each side of Pilot Bar) and lift off Upper Bracket (Item 31) and Lower Bracket (Item 32).
4. Remove Air Signal Valves (Item 20).
5. To REASSEMBLE, REVERSE procedure.

Cylinder Tube and Muffler

1. Remove Pilot Bar Subassembly (See previous instructions).
2. Remove two Screws (Item 30) with 3/16" hex wrench and remove muffler subassembly.
3. Remove Gasket (Items 28).
4. Remove four Nuts (Item 26) with open end wrench.
5. Lift upward and remove Upper Casting (Item 8).
6. Remove four Tie Rods (Item 25).
7. Remove Air Tube (Item 7).
8. Lift upward and remove Cylinder Tube (Item 6).
9. Remove Piston and Piston Rod (Item 5).
10. Remove four Connecting Rods (Item 41) with open end wrench.
11. To REASSEMBLE, REVERSE procedure.

NOTE: Align two holes on the the Cylinder Tube (Item 6) with two holes on the Pilot Bar (Item 24) before tightening Tie Rods (Item 25) so that proper seal with "O"-rings is acheived.

FOR AIRMOTOR WITH PUMP STOP

WARNING

ALWAYS check equipment for proper operation before each use, making sure safety devices are in place and operating properly. DO NOT alter or modify any part of the equipment as this may cause a malfunction and result in serious bodily injury.

BEFORE CONNECTING AIR-MOTOR TO AIR LINE

LOCTITE® AIRMOTORS are fully pneumatic and require a minimum specified size of air supply hose for proper operation. Check specification for minimum ID. of the air supply hose and select corresponding sizes of air controls and accessories for non-restrictive air flow.

If quick disconnect coupling should be used, install supplied coupler to insure proper airmotor operation.

NOTE: Whenever flammable materials are pumped, ground Airmotor according to Local Codes.

OPERATING PRECAUTIONS
Use Loctite® replacement parts to assure compatible pressure rating.

Heed ALL warnings.

DO NOT OPERATE Airmotor in excess of recommended pressure range.

Disconnect air line and relieve (vent) pressure when Airmotor sits idle for long periods of time and before servicing.

WARNING

ALWAYS read and follow the fluid and solvent manufacturer's recommendations regarding the use of protective clothing and equipment.

WARNING

To reduce the risk of serious bodily injury or property damage. NEVER exceed the maximum air or fluid working pressure of the lowest rated system component.

ATTACHING AIRMOTOR TO PUMPTUBE

1. Tightly attach the tie rods(Item 41) to the Airmotor lower casting. Use short threaded end of tie rods.
2. Mount Airmotor on top of pump tube outlet and tightly connect pump tube coupling nut to Airmotor Piston Rod (Item 5).
3. Hand tighten tie rods to the pump tube with four nuts (Item 42) supplied with Airmotor.
4. Connect air supply and slowly cycle pump several times using only enough air pressure to operate pump without stalling.
5. STOP pump on "UP" stroke and tighten four nuts to securely fasten Airmotor to pump tube.

SERVICE AND DISASSEMBLY PROCEDURE

WARNING

Always disconnect air supply to Airmotor and relieve pressure before checking, servicing, or repairing any part of Airmotor.

Tools Required

1. 7/64" (.109) Allen Wrench
2. 5/32" (.156) Allen Wrench
3. 3/16" (.189) Allen Wrench
4. 1/8" (.125) Allen Wrench
5. 9/64" (.1406) Allen wrench
6. 3/4" (.750) Open End Wrench (for 6" Airmotor)
7. #1 Phillips screwdriver
8. 1/2" (.500) Open End Wrench
9. 1/2" (.500) Box End Wrench
10. Pliers
11. 0-100 in. lb. Torque Wrench
12. 0 - 75 Ft. lb. Torque Wrench.

The modular design of the Airmotor and accessibility of vital operation parts make service available without taking Airmotor out of line or without complete disassembly.

Power Valve

1. Remove four screws (Items 27 & 34) with 3/16" hex wrench (2 on each side).
2. Remove End Caps (Items 10 & 14).
3. Push out Valve Spool (Item 13).
4. Remove Spool Bumpers (Item 9) (One from each end).
5. Remove "O" Ring (Item 11)(One from each end of valve body).
6. Remove four Screws (Item 37) with 3/16" hex wrench and lift valve body (Item 12).
7. Remove Gasket (Item 15) to complete valve disassembly.
8. To REASSEMBLE, REVERSE procedure.

"Optional" Pump Stop Subassembly

1. Remove four Screws (item 23) (two on each end) with 3/16" Allen wrench and pull out Pump Stop Subassembly.
2. Remove two Screws (Item 39) with 7/64" Allen wrench and lift out Valve Body (item 17).
3. Remove four Screws (Item 32) (two on each side of Pump Stop) with1/8" Allen wrench and remove Signal Valve Caps (Item 31) and Air Signal Valves (Item 20).
4. Remove four (4) screws (item 80) with 9/64" Allen wrench to remove labyrinth sub-assembly from Pump Stop.
5. Remove four Screws (Item 24) with 3/16" Allen wrench and lift off Upper Body (Item 50) and Upper Gasket (Item 51).
6. Remove Gasket Plate (Item 52) and Lower Gasket (Item 53).
7. Remove Air Filter (Item 40) in two locations.
8. Remove Pump Sleeve (Item 56) and Piston (Item 55).
9. Remove Diaphragm Seal and Retainer, Diaphragm, Spring and Stop Valve Assy. (Items 61, 57, 58, 59 & 60).
10. Remove Trip Indicator (Item 48).
11. To re-assemble, reverse the disassembly procedure with the following precautions
    a. The upper and lower gaskets (items 51 & 53) should be coated with a film of light oil (SAE 10) before assembly.
    b. When new umbrella valves (item 63) are installed, note that the gasket plate (item 52) has a circle and an "X" stamped into both sides of the gasket plate. The umbrella valve is installed into the plate from the circle side of the plate. One umbrella valve should be installed into each side of the plate so that the valve is within the circle and the stub end protrudes through the "X".
    c. After installing the umbrella valve (item 63) the long rubber stem of the valve is to be removed, leaving the rubber ball end intact to secure the valve to the plate.
    d. When installing the pump sleeve, (item 56) into the lower body, (item 54) the sleeve should be placed into the lower body as shown in Illustration on Page 12. When properly installed the molded pin protruding from the pump sleeve will fit into a mating hole in gasket (item 53) and the gasket can then be installed properly over pins, (item 66). If the sleeve is not properly aligned as shown, the Pump Stop cannot be assembled properly.

Labyrinth Sub-Assembly Disassembly Procedure:

1. Use 9/64" Allen wrench to remove four screws (item 80) from the face of the labyrinth sub-assembly to remove it from the Pump Stop assembly.
2. Remove screw (item 88) using a #1 Phillips screwdriver to remove the cover (item 87) over the selector knob.
3. Remove the selector bolt (item 86) and washers (item 85) to remove the selector knob. Use caution when removing the selector knob from the labyrinth assembly, a pin (item 82), spring (item 83), and 7 balls (item 81) are retained by the selector knob and could be lost.
4. Remove gasket (item 74) from the backside of the labyrinth sub-assembly.
5. Using a 9/64" Allen wrench remove six screws (item 73) from the backside of the labyrinth sub-assembly.
6. Separate the labyrinth sub-base (item 75) from the labyrinth cover (item 78) exposing the labyrinth plate and gasket.
7. Remove the gasket (item 76) and plastic laminated labyrinth (item 77).
8. Remove seven O-rings (item 79) from the labyrinth cover (item 78).

Labyrinth Sub-Assembly Re-assembly Procedure:

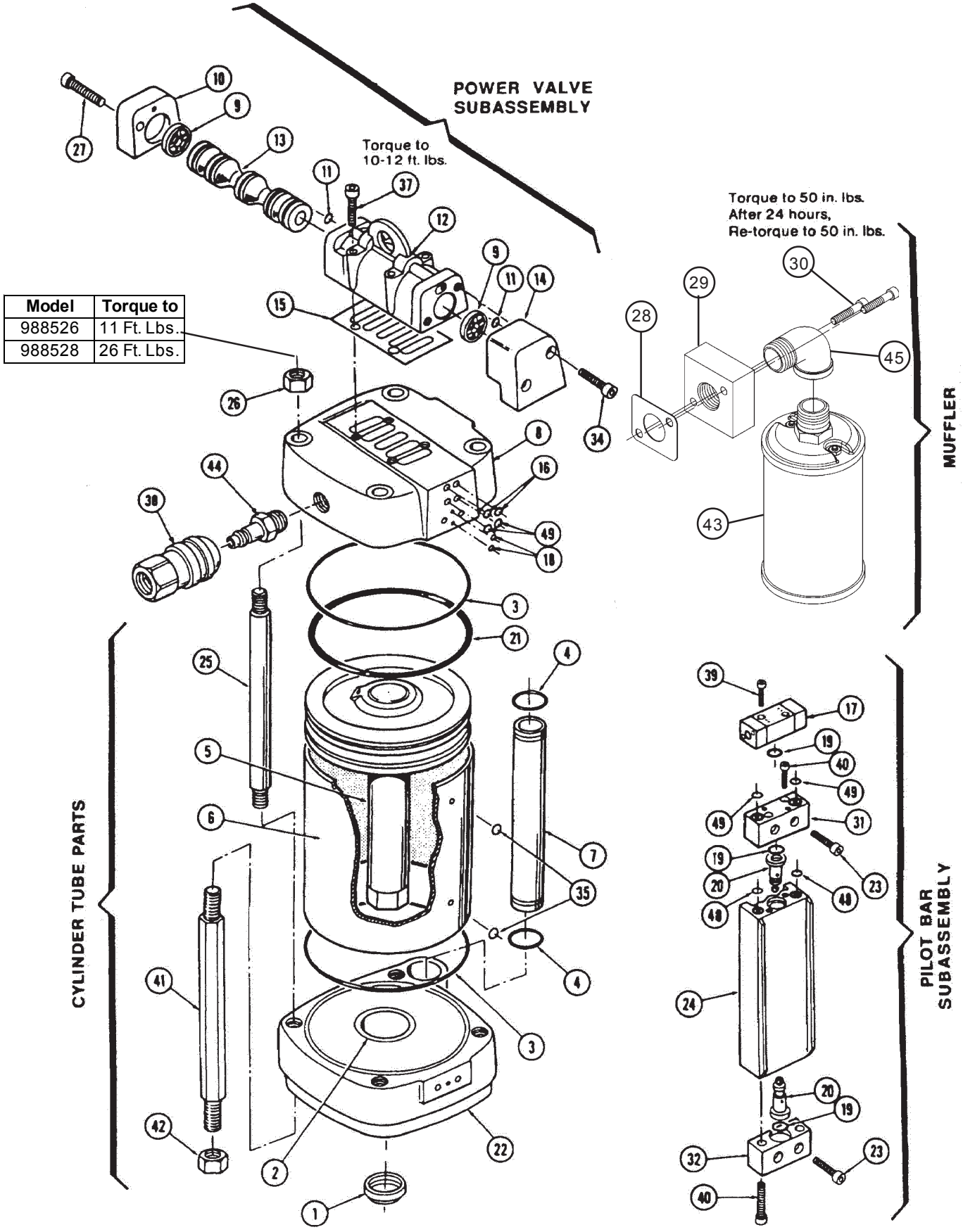
Re-assembly is basically the reverse of the disassembly procedure with the following precautions.

1. Insure that the plastic laminated labyrinth (item 77) is in good condition before re-assembly. The clear plastic laminate should be in sound condition without any tears or indications of separation from the brass labyrinth plate inside. Visually inspect the labyrinth plate for any sighs of blockage including, but not limited to, dirt, grease, oil, or water, which should be visible through the clear laminating material.
2. Keep all labyrinth components clean and free of grease, oil, and dirt, except as noted.
3. A very light coating of light grease may be used to retain the balls (item 79) in place when installing the selector knob (item 84).
4. When reassembling the labyrinth sandwich, install the six screws (item 73) but do not tighten. Install the selector knob (item 84) and selector bolt (item 86) before tightening the six screws (item 73). Tighten the six screws (item 73) to 12 in-lbs. Tighten the selector bolt (item 86) to 50 in-lbs.
5. When installing the labyrinth sub-assembly onto the Pump Stop assembly use four screws (item 80) and tighten to 12 in-lbs.

Cylinder Tube and Muffler

1. Remove Pump Stop Subassembly (See previous instructions).
2. Remove two Screws (Item 30) with 3/16” hex wrench and remove Muffler Assembly.
3. Remove Gasket (Items 28).
4. Remove four Nuts (Item 26) with open end wrench.
5. Lift upward and remove Upper Casting (Item 8).
6. Remove four Tie Rods (Item 25).
7. Remove Air Tube (Item 7).
8. Lift upward and remove Cylinder Tube (Item 6).
9. Remove Piston and Piston Rod (Item 5).
10. Remove four Connecting Rods (Item 41) with open end wrench.
11. To REASSEMBLE, REVERSE procedure.
    NOTE: Align two holes on the the Cylinder Tube (Item 6) with two holes on the Pump Stop Subassembly before tightening Tie Rods (Item 25) so that proper seal with O-rings is achieved.

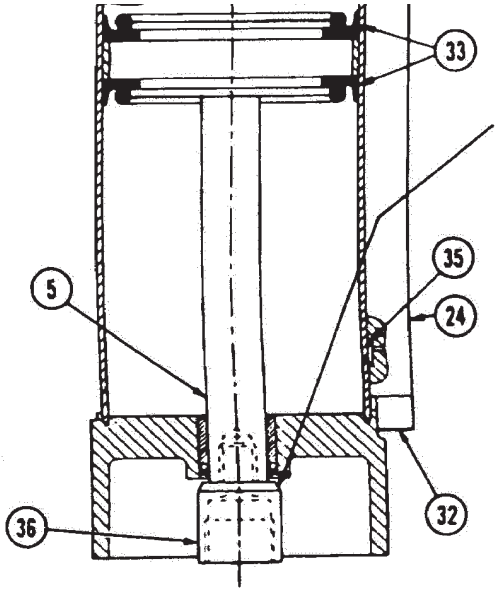
STANDARD AIRMOTOR WITHOUT PUMP STOP



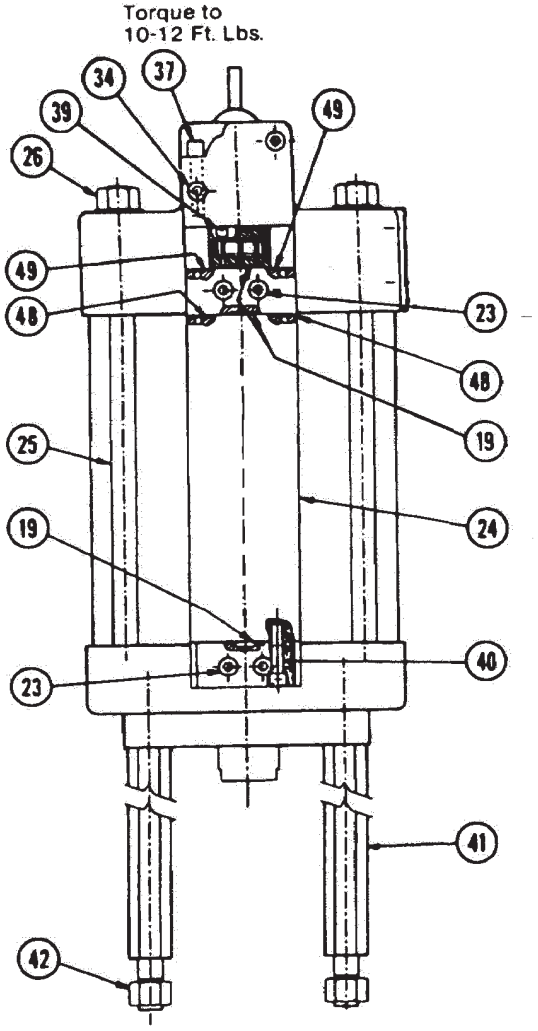
Model	Torque to
988526	11 Ft. Lbs.
988528	26 Ft. Lbs.

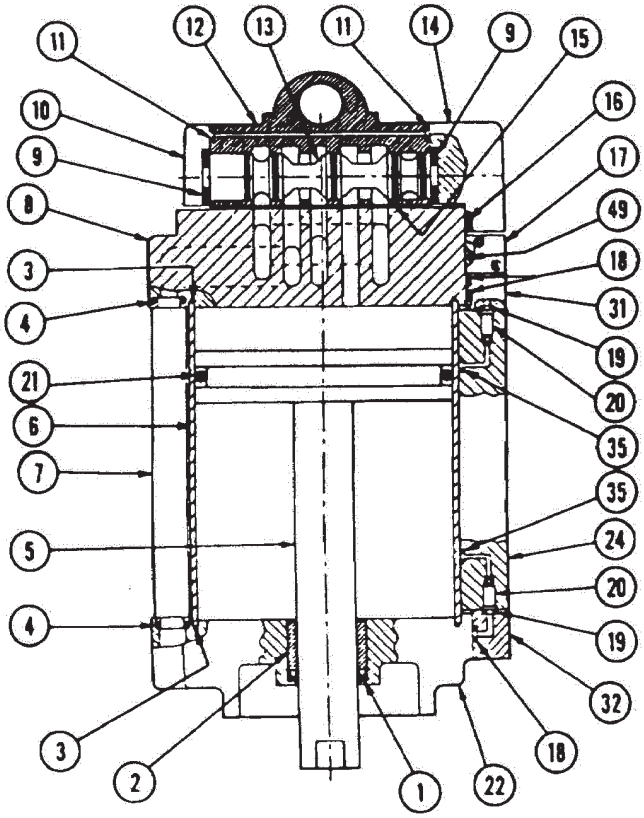
NOTE: Refer to Page 3 for Service Assemblies & Kits

AIRMOTOR WITHOUT PUMP STOP

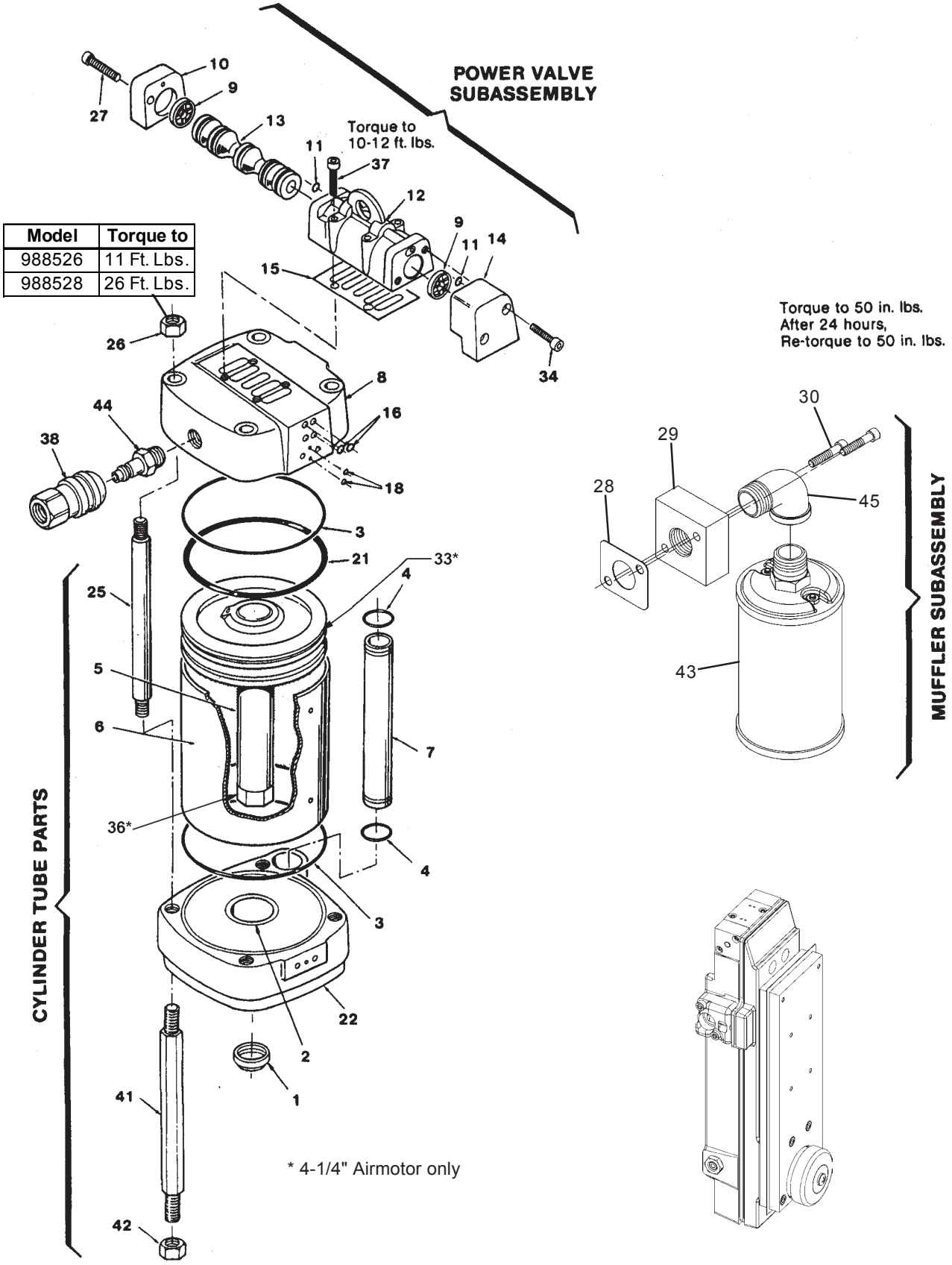


4-1/4" Airmotor Only



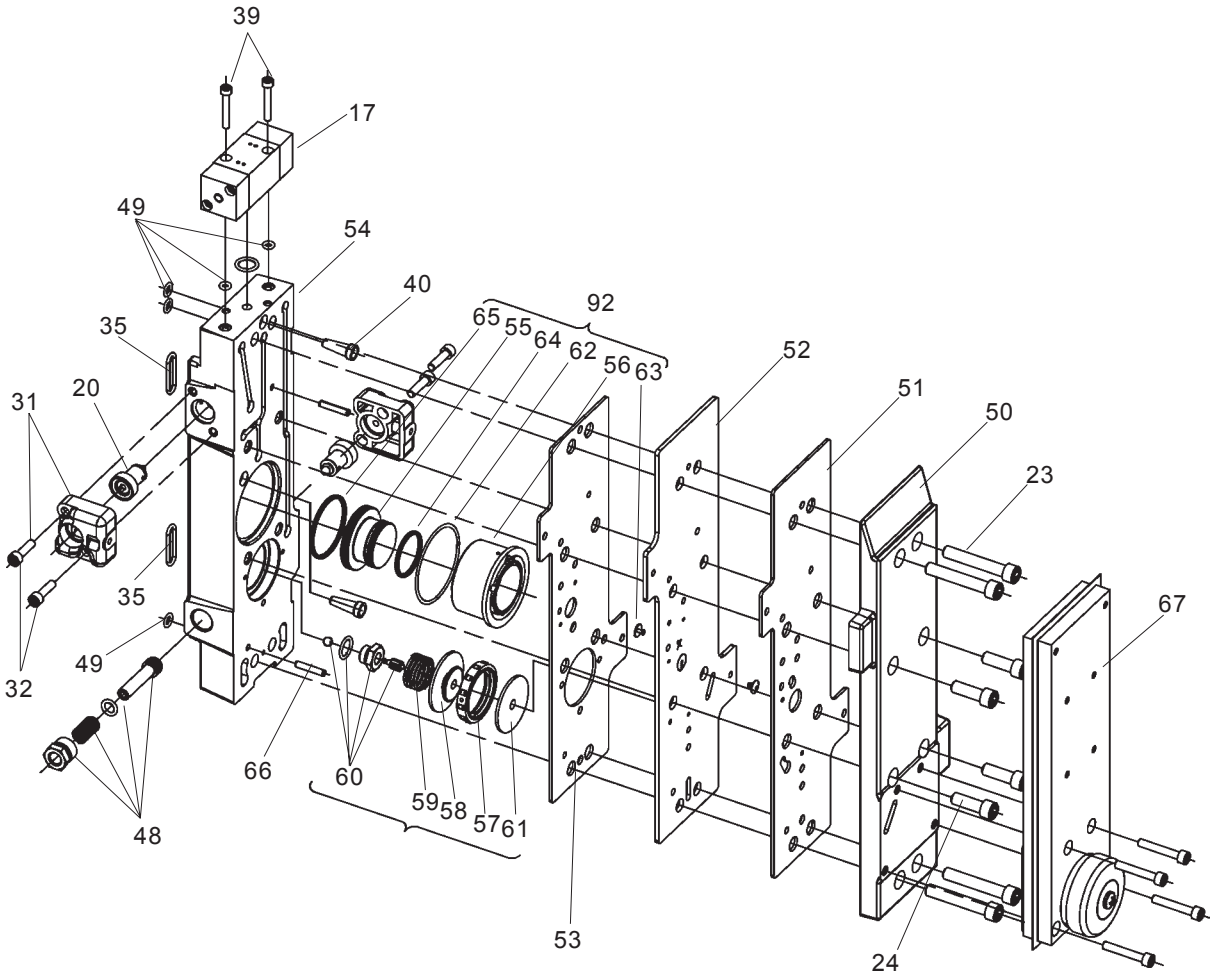


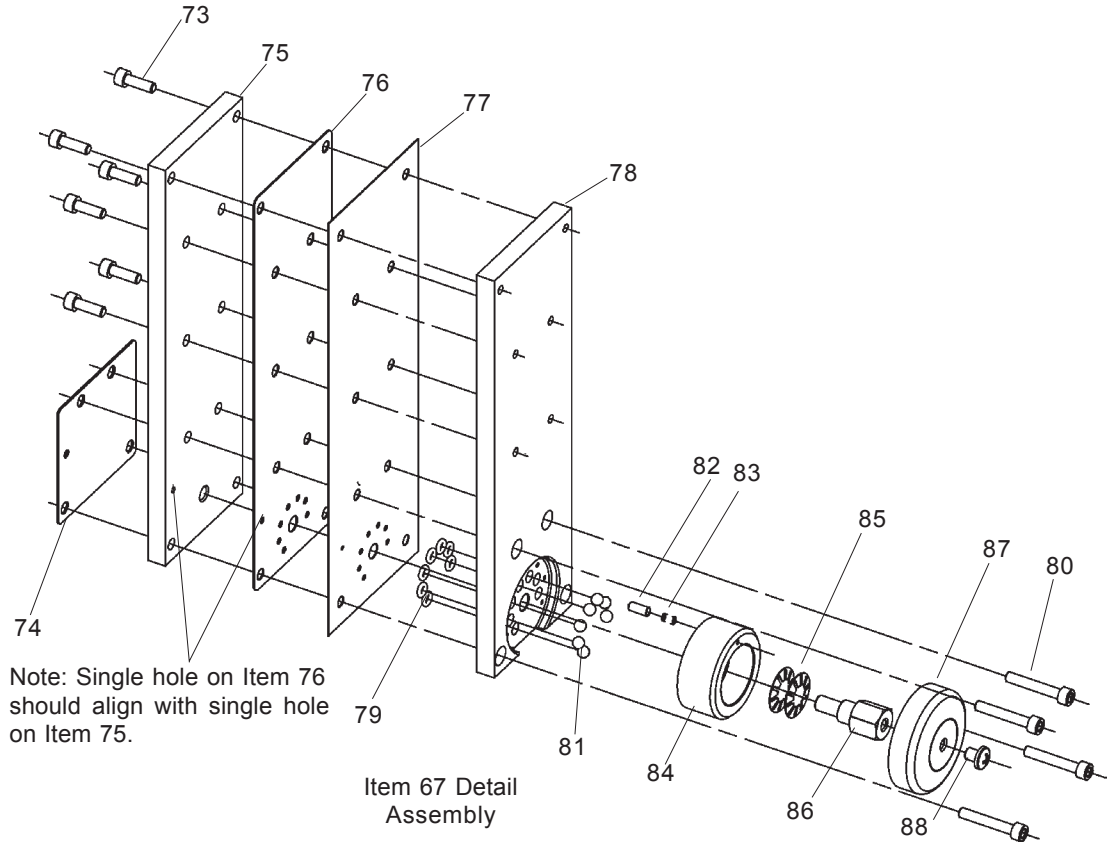
STANDARD AIRMOTOR WITH PUMP STOP



Model	Torque to
988526	11 Ft. Lbs.
988528	26 Ft. Lbs.

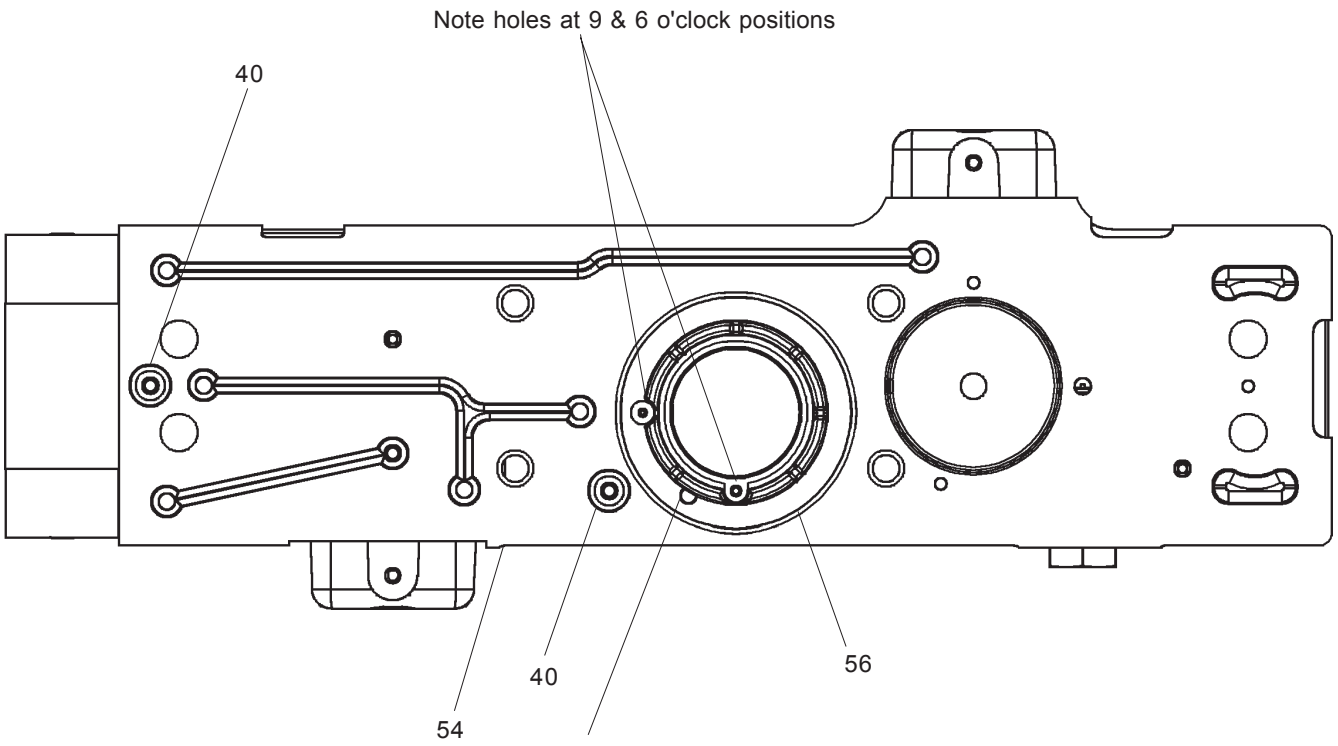
NOTE: Refer to page 4 for service assembly & kits



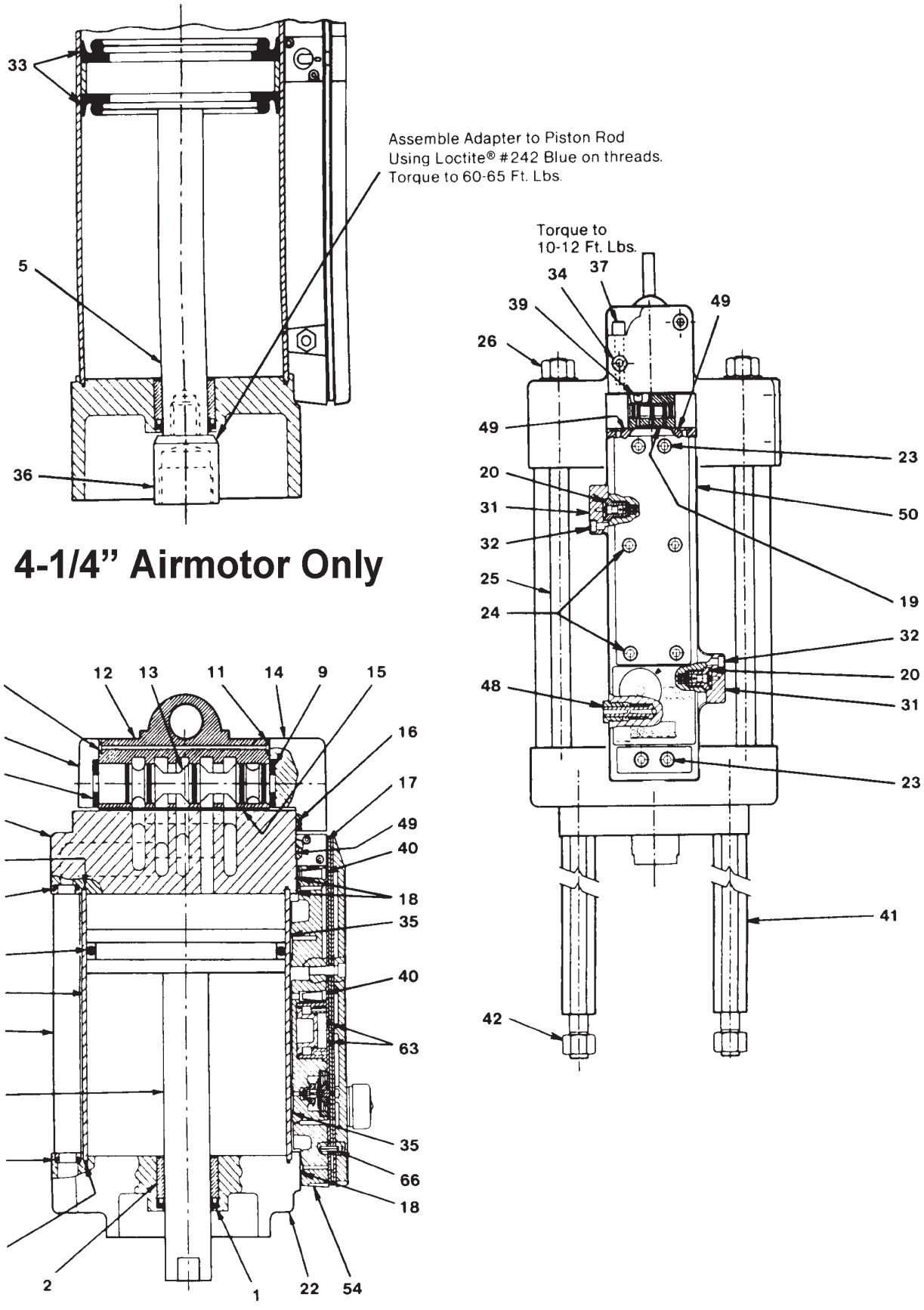


Note: Single hole on Item 76 should align with single hole on Item 75.

Item 67 Detail Assembly


Note holes at 9 & 6 o'clock positions
40
40
56
54
Molded pin on pump sleeve. Position to
about 7 O'Clock position as shown.

AIRMOTOR WITH PUMP STOP



4-1/4" Airmotor Only

PARTS LIST - AIRMOTOR WITHOUT PUMP STOP

Item No.	Description	Qty.	Part No. 988528 (6" Dia.)	Part No. 988526 (4-1/4" Dia.)
1	U-Cup (Buna-N)	1	(Note #1)	(Note #2)
2	Rod Bearing	1	AC241732	AC241733
3	Seal, Cylinder (Buna-N)	2	(Note #1)	(Note #2)
4	O-ring (Buna-N)	2	(Note #1)	(Note #2)
5	Piston Rod Assembly	1	AC241741	AC241742
6	Cylinder Tube	1	AC241745	AC241746
7	Air Tube	1	AC241748	AC241749
8	Upper Casting	1	AC241751	AC241752
9	Bumper, Valve	2	(Note #4)	(Note #4)
10	Cap, Valve	1	AC241755	AC241755
11	O-ring (Buna-N)	2	(Note #4)	(Note #4)
12	Body, Valve	1	(Note #5)	(Note #5)
13	Spool, Valve	1	(Note #5)	(Note #5)
14	Cap, Valve	1	AC241760	AC241761
15	Gasket	1	(Note #4)	(Note #4)
16	O-ring (Buna-N)	2	(Note #4)	(Note #4)
17	Relay Valve	1	AC242787	AC242787
18	O-ring (Buna-N)	3	(Note #3)	(Note #3)
19	O-ring (Buna-N)	3	(Note #3)	(Note #3)
20	Air Signal Valve	2	AC241768	AC241768
21	O-ring Piston(Buna-N)	1	(Note #1)	—
22	Lower Casting	1	AC241774	AC241775
23	Screw (1/4-20 x 7/8")	4	AC50526	AC50526
24	Pilot Bar	1	AC241778	AC241778
25	Tie Rod	4	AC241779	AC241767
26	Nut	4	AC51007	AC51001
27	Screw	2	AC244995	AC244995
28	Gasket	1	AC241024	AC241024
29	Muffler Adapter	1	AC84722	AC84722
30	Screw (1/4-20 x 1-1/4")	2	AC50553	AC50553
31	Bracket, Upper	1	AC241784	AC241784
32	Bracket, Lower	1	AC241785	AC241785
33	Seal, Piston	2	—	(Note #2)
34	Screw	2	AC241783	AC244994
35	O-ring (Buna-N)	2	(Note #3)	(Note #3)
36	Adapter	1	—	AC241789
37	Screw (1/4-20 x 2¼")	4	AC244975	AC244975
38	Coupler	1	AC655012	AC655008
39	Screw (6-32)	2	AC50816	AC50816
40	Screw (1/4-20)	4	AC50823	AC50823
41	Tie Rod	4	AC241023	AC241023
42	Nut (1/2-20)	4	AC236023	AC236023
43	Muffler	1	AC273507	AC273507
44	Nipple	1	AC653112	AC653112
45	Elbow	1	AC67062	AC67062
46	Unused			
47	Unused			
48	O-ring (Buna-N)	2	(Note #3)	(Note #3)
49	O-ring (Buna-N)	4	(Note #3)	(Note #3)

Parts List Notes:

NOTES:

1. Included in 988753 Cylinder Tube Soft Parts Kit for Part No. 988528 (6" Airmotor).
2. included in 988752 Cylinder Tube Soft Parts Kit for Part No. 988526 (4-1/4" Airmotor).
3. Included in 988746 Soft Parts Kit for Pilot Bar Subassembly.
4. Incuded in 988751 Soft Parts kit for Power Valve Assembly.
5. Included in 988750 Power Valve Spool & Body.

PARTS LIST FOR AIRMOTORS WITH PUMP STOP

Item No.	Description	Qty.	Part No. 988528 (6" Dia.)	Part No. 988526 (4¼" Dia)	Item No.	Description	Qty.	Part No. 988528 (6" Dia.)	Part No. 988526 (4¼" Dia)
1	U-Cup (Buna-N)	1	(Note #1)	(Note #2)	35	O-ring (Buna-N)	2	(Note #4)	(Note #4)
2	Rod Bearing	1	AC241732	AC241733	36	Adapter	1	------	AC241789
3	Seal, Cylinder (Buna-N)	2	(Note #1)	(Note #2)	37	Screw (¼-20 x 2¼")	4	AC244975	AC244975
4	O-ring (Buna-N)	2	(Note #1)	(Note #2)	38	Coupler	1	AC655012	AC655008
5	Piston Rod Assembly	1	AC241741	AC241742	39	Screw	2	AC50816	AC50816
6	Cylinder Tube	1	AC241745	AC241746	40	Air Filter	2	(Note #5)	(Note #5)
7	Air Tube	1	AC241748	AC241749	41	Tie Rod	4	AC241023	AC241023
8	Upper Casting	1	AC241751	AC241752	42	Nut (½-20)	4	AC236203	AC236203
9	Bumper, Valve	2	(Note #3)	(Note #3)	43	Muffler	1	AC273507	AC273507
10	Cap, Valve	1	AC241755	AC241755	44	Nipple	1	AC653112	AC653112
11	O-ring (Buna-N)	2	(Note #3)	(Note #3)	45	Elbow	1	AC67062	AC67062
12	Body, Valve	1	(Note #10)	(Note #10)	46	Not Used			
13	Spool, Valve	1	(Note #10)	(Note #10)	47	Not Used			
14	Cap, Valve	1	AC241760	AC241761	48	Trip Indicator	1	AC243852	AC243852
15	Gasket	1	(Note #3)	(Note #3)	49	O-ring (Buna-N)	4	(Note #4)	(Note #4)
16	O-ring (Buna-N)	2	(Note #3)	(Note #3)	50	Upper Body	1	AC243855	AC243855
17	Relay Valve	1	AC242787	AC242787	51	Upper Gasket (Nitrile)	1	(Note #5)	(Note #5)
18	O-ring (Buna-N)	3	(Note #4)	(Note #4)	52	Gasket Plate	1	(Note #7)	(Note #7)
19	O-ring (Buna-N)	1	(Note #4)	(Note #4)	53	Lower Gasket (Nitrile)	1	(Note #5)	(Note #5)
20	Air Signal Valve	2	AC241768	AC241768	54	Lower Body	1	N/A	N/A
21	O-ring Piston(Buna-N)	1	(Note #1)	------	55	Piston	1	(Note #8)	(Note #8)
22	Lower Casting	1	AC241774	AC241775	56	Pump Sleeve	1	(Note #8)	(Note #8)
23	Screw (¼-20 x 1½")	4	AC50051	AC50051	57	Diaphragm Retainer	1	(Note #9)	(Note #9)
24	Screw (¼-20 x 7/8")	4	AC50850	AC50850	58	Diaphragm	1	(Note #9)	(Note #9)
25	Tie Rod	4	AC241779	AC241767	59	Spring	1	(Note #9)	(Note #9)
26	Nut	4	AC51007	AC51001	60	Stop Valve Assembly	1	(Note #9)	(Note #9)
27	Screw	2	AC244995	AC244995	61	Diaphragm Seal	1	(Note #9)	(Note #9)
28	Gasket	1	AC241024	AC241024	62	O-ring (Buna-N)	1	(Note #8)	(Note #8)
29	Muffler Adapter	1	AC84722	AC84722	63	Umbrella Seal (Nitrile)	2	(Note #7 & 8)	(Note #7 & 8)
30	Screw (1/4-20 x 1-1/4")	2	AC50553	AC50553	64	Quad Ring (Buna-N)	1	(Note #8)	(Note #8)
31	Signal Valve Cap Kit	2	AC243853	AC243853	65	Quad Ring (Buna-N)	1	(Note #8)	(Note #8)
32	Screw (8-32 x 5/8)	4	(Note #6)	(Note #6)	66	Spring Pin	2	AC243614	AC243614
33	Seal, Piston	2	------	(Note #2)	67	Bleed Assembly	1	AC243854	AC243854
34	Screw	2	AC241783	AC244994					

NOTES:
1. Included in 988753 Cylinder Tube Soft Parts Kit for Part No. 988528 (6" Airmotor).
2. Included in 988752 Cylinder Tube Soft Parts Kit for Part No. 988526 (4¼" Airmotor).
3. Included in 988751 Soft Parts Kit for Power Valve Subassembly.
4. Included in 988746 Soft Parts Kit for Pump Stop Subassembly.
5. Included in AC273427 Gasket and Air Filter Kit Item 89.
6. Included in AC243853 Signal Valve Cap Kit Item 31.
7. Included in AC244093 Gasket Plate with Check Valves Item 90.
8. Included in AC244092 Air Pump Repair Kit Item 92.
9. Included in AC244091 Stop Valve Repair Kit Item 91.
10. Included in 988750 Power Valve & Spool Body.

FOR AIRMOTORS WITH PUMP STOP
PARTS LIST (CONTINUED FROM THE PREVIOUS PAGE)

Item No.	Description	Qty.	Part No. 988528 (6" Dia.)	Part No. 988526 (4-1/4" Dia)
73	8-32 Soc. Hd. Cap Screw	6	AC273385	AC273385
74	Gasket (Nitrile/Fiber)	1	AC273386	AC273386
75	Intermediate Base	1	AC273387	AC273387
76	Gasket (Nitrile/Fiber)	1	AC273379	AC273379
77	Laminated Labyrinth	1	AC273396	AC273396
78	Labyrinth Cover	1	AC273389	AC273389
79	O-Ring (Nitrile)	7	AC34499	AC34499
80	8-32 x 1 Soc. Hd. Cap Screw	4	AC273393	AC273393
81	Ball	7	AC69102	AC69102
82	Index Pin	1	AC273391	AC273391
83	Spring Compression	1	AC273392	AC273392
84	Selector Knob	1	AC273380	AC273380
85	Washer,Spring	2	AC243845	AC243845
86	Selector Bolt	1	AC273381	AC273381
87	Selector Cover	1	AC273382	AC273382
88	Screw	1	AC243844	AC243844
89	Gasket & Filter Kit	1	AC273427	AC273427
90	Gasket Plate & Check Valves	1	AC244093	AC244093
91	Stop Valve Repair Kit	1	AC244091	AC244091
92	Air Pump Repair Kit	1	AC244092	AC244092

Setting the Pump Stop Trip Speed

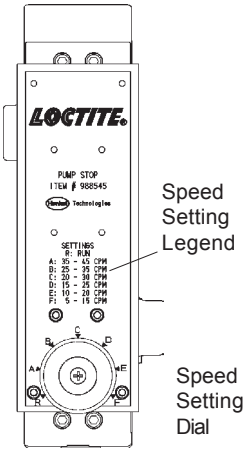


Illustration 1

Speed Settings:

R Run mode, Pump Stop is disabled. Air motor will continue to run at any speed.

A 35 to 45 Cycles per Minute, Pump Stop will trip turning off the air motor when the air motor speed reaches a speed of 35 to 45 cycles per minute.

B 25 to 35 Cycles per Minute, Pump Stop will trip turning off the air motor when the air motor speed reaches a speed of 25 to 35 cycles per minute.

C 20 to 30 Cycles per Minute, Pump Stop will trip turning off the air motor when the air motor speed reaches a speed of 20 to 30 cycles per minute.

D 15 to 25 Cycles per Minute, Pump Stop will trip turning off the air motor when the air motor speed reaches a speed of 15 to 25 cycles per minute.

E 10 to 20 Cycles per Minute, Pump Stop will trip turning off the air motor when the air motor speed reaches a speed of 10 to 20 cycles per minute.

F 5 to 15 Cycles per Minute, Pump Stop will trip turning off the air motor when the air motor speed reaches a speed of 5 to 15 cycles per minute.

Note: These speed settings are not precision speed control settings for the air motor. All speed settings are approximate and are not intended for use in precisely controlling the speed of a pump/pump tube combination. Precision control of the pump operating speed is beyond the scope of this device.

1. Remove the selector cover (item 87) by removing screw (item 88) to gain access to the selector knob (item 84).
2. Select the RUN mode by positioning the selector knob pointer (a small round hole in the face of the selector knob) to the letter R on the face of the labyrinth cover (item 78).
3. With the pump and air motor operating normally, determine the speed of the pump by counting the number of strokes the pump makes per minute.
4. After determining the normal operating speed of the pump and air motor, consult the Setting legend on the face of the Labyrinth cover (item 78), and find the speed range that is closest to the normal operating speed of the air motor.
5. To allow for normal fluctuation in the operating speed of the air motor and pump, set the selector knob to the next highest speed setting.
6. Test the pump in operation to make sure that it is operating normally before leaving the pumping system unattended.

⚠ WARNING

Always shut off air supply before servicing Airmotor. An Airmotor in the tripped condition is under pressure and may restart unexpectedly for one or two cycles.

Pump Stop Operation

Selecting a speed range letter other than R, will activate the Pump Stop, as discussed earlier. The Pump Stop will "Trip", stopping the air motor from operating, if the threshold speed setting is exceeded. The air motor will not restart until it is intentionally reset. The cause of a pump OVERRUN may be anything that will allow the pump to run faster than normal such as, but not limited to the following.

Cavitation: Low fluid levels will allow the pump to cavitate, where the pump is trying to pump air instead of fluid into the fluid lines.

Broken Hose or Fitting: will cause a loss in fluid pressure allowing the pump to run faster than normal.

Increase in Air Pressure: Either sudden or gradual, may cause a pump operating from an air supply system which is marginal or inadequate for the application, to rise as other equipment in the plant is shut down, thus making more air available to the pump to operate with. Unauthorized tampering with an air pressure regulator may also be a cause.

Increase in Demand: Fluid demand may be greater than expected.

A tripped condition can be determined if the air motor has stopped, the RED/ORANGE indicator pin will be out (see Illustration 2), the pump rod will be in the down position and air will be heard venting from the VENT HOLE in the lower body of the Pump Stop. (See Illustration 4)

Before resetting, the cause of the OVER-RUN should be determined if possible before restarting the pump. Check for low fluid levels, broken hose or fitting connections before restarting. If a cause cannot be determined without starting the pump the pump may be cautiously restarted and observed for any indications of a problem before resuming normal operation.

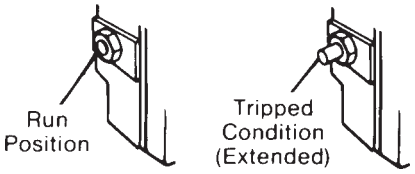


Illustration 2

Resetting the Pump Stop after Tripping

1. Turn off the air supply to the air motor.
2. Press the Flush Reset Button (located on the right side of the Relay Valve item 17) with a screwdriver or other suitable object, (See Illustration 3, below), until the air motor shifts and the Indicator pin in item 48 retracts into the Pump Stop. Hold the reset button until all air has been vented from the air motor. (On large air motors this may take several seconds.) Otherwise wait for about 2 minutes until all air has been vented before attempting a restart.
3. Turn on air supply and the air motor will restart.

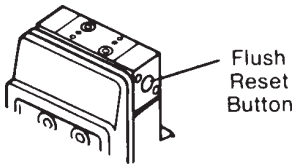


Illustration 3

4. If the cause of the Pump Stop trip is cavitation or a broken fluid line the Pump Stop may trip again very quickly.
5. When in the process of setting up a system and determining the speed of the pump/pump tube system use the RUN setting to prevent unnecessary tripping of the Pump Stop while set-up is in progress or when trouble shooting the system. Be sure to reactivate the Pump Stop by resetting to the desired run setting before leaving the pump system unattended.

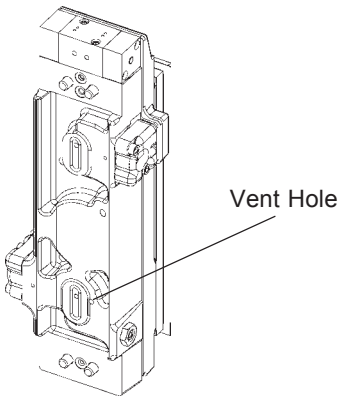
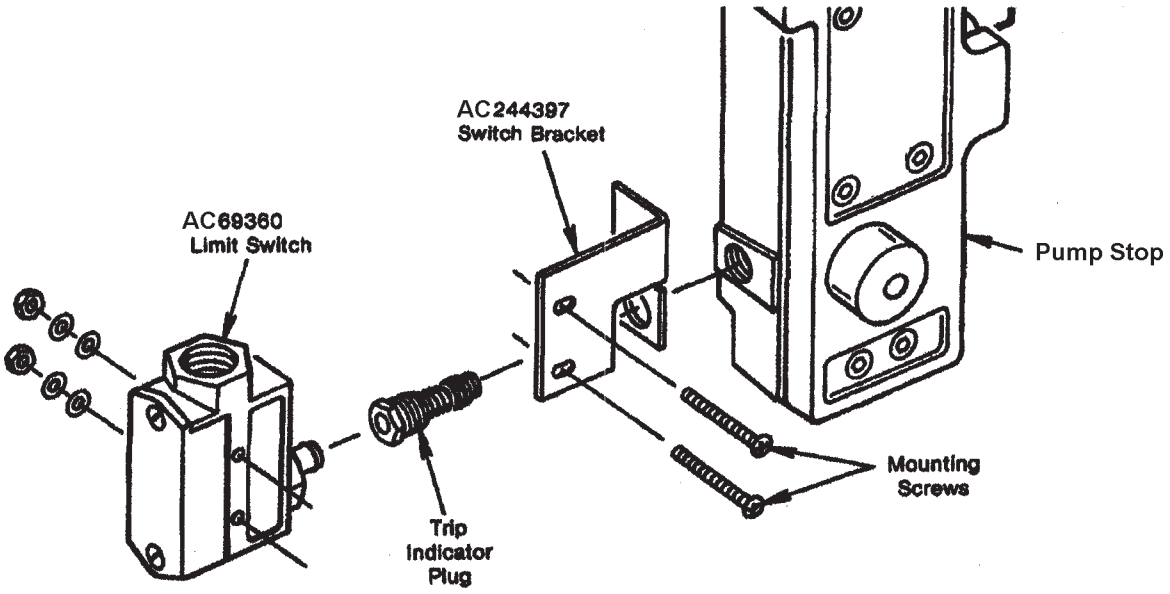


Illustration 4
Rear View of Pump Stop

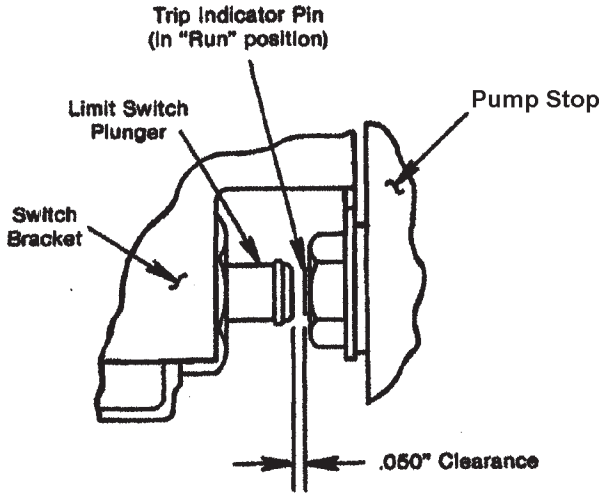
PROBLEM	POSSIBLE CAUSE	SOLUTION
Airmotor is not operating, air is coming from exhaust.	Inadequate air supply to airmotor.	Check air supply and adjust to minimum recommended level. Check air supply hose and piping for minimum recommended size. Ensure that FRL and quick disconnect couplings meet or exceed the minimum specified sizes and do not restrict airflow to the airmotor.
Erratic or accelerated operation with short stroking. Airmotor hesitates on up or down stroke.	Dirty or damaged Relay Valve (Item 17) or Air Signal Valve (Item 20) or stop valve assembly (Item 60).	Check valves and clean if necessary. Replace any damaged seals or worn parts.
	Pump Cavitation	Check Fluid Level. Ensure that pump inlet is not blocked or restricted or is large enough to handle flow into pump inlet.
Pump Stop trips off even though airmotor is operating below set trip speed. (Trips after three or more strokes.)	Dirty or blocked labyrinth plate or components.	Clean or replace labyrinth components. Check for grease or oil blocking air passages in labyrinth subassembly. (A blocked labyrinth may be confirmed (in quiet locations) by turning the selector knob to the RUN mode setting immediately after the airmotor has stopped. If a sudden rush of air escaping is heard, the labyrinth is either blocked installed incorrectly).
	Grease or dirt on balls (item 81) in labyrinth cover (Item 78).	Clean balls and labyrinth cover with solvent. Coat with very light film of light grease to hole balls in cover.
Pump Stop trips even though airmotor is operating below set trip speed (within three strokes).	Leaking Diaphragm (Item 58).	Replace Diaphragm.
	Leaking Upper Gasket (Item 51).	Replace Upper & Lower Gaskets (Items 51 & 53).
	Upper Piston Quad Ring (Item 64) is leaking.	Replace Quad Ring.
	Laminated labyrinth plate (item 77) is installed incorrectly.	Observe the laminated labyrinth plate and find single hole on item 76 and align with hole on Item 75.
Pump Stop trips at proper speed (as indicated by the sound of air surging into the diaphragm chamber), but airmotor does not stop, indicator pin does not pop out.	Stop Valve vent hole in Lower Body (Item 54) is clogged or blocked. (See Illustration 7)	Unclog vent hole in lower body.
	Stop valve (Item 60) is damaged.	Check stop valve and replace if worn or damaged.
	Diaphragm seal is damaged, worn, deformed or improperly installed.	Replace damaged or worn diaphragm seal,or reinstall if good into diaphragm (item 58) with twisting action to fully seat in mating hole.
	Inadequate air supply to airmotor.	See above for checking air supply. Ensure that air regulator is set to air pressure at or greater than the minimum recommended air pressure for the airmotor installed.
Pump Stop will not trip even though airmotor has been running above the trip speed for more than 1 minute.	Discharge Umbrella Valve (Item 63) is damaged or worn.	Replace both umbrella valves.
	Diaphragm seal is damaged, worn deformed or improperly installed.	Replace damaged or worn diaphragm seal, or reinstall if good into diaphragm (item 58) with twisting action to fully seat in mating hole.
	Leaking Upper Gasket (Item 51) or Lower Gasket (Item 53).	Replace gaskets (items 51 & 53)
	Stuck Metering Pump Piston (Item 55).	Install air pump repair kit, replacing items 55, 56, 63, 64 & 65.
	Inlet Air Filter (Item 40) is completely or partially clogged.	Clean or replace inlet air filter.

P/N 988552
LOW LEVEL MICROSWITCH KIT



INSTALLATION INSTRUCTIONS

1) Remove Trip Indicator Plug from Pump Stop Install the Switch Bracket (in position shown) on ***Pump Stop*** and secure by reinstalling Trip Indicator Plug.
2) Using the two mounting screws, washers and nuts, assemble the 69360 Limit Switch (in up position as shown) to Switch Bracket loosely.
3) Adjust Limit Switch to provide a .050" clearance between Limit Switch Plunger and Trip Indicator Pin (with pin in “Run” position). Tighten mounting screws securely to hold switch in place.



SWITCH ADJUSTMENT

WARRANTY

Henkel expressly warrants that all products referred to in this Instruction Manual for (Item 988526 Air Motor, 988528 Air Motor, 988545 Pump Stop, 988552 Low Level Micro Switch) (hereafter called “Products”) shall be free from defects in materials and workmanship. Liability for Henkel shall be limited, as its option, to replacing those Products which are shown to be defective in either materials or workmanship or to credit the purchaser the amount of the purchase price thereof (plus freight and insurance charges paid therefor by the user). The purchaser’s sole and exclusive remedy for breach of warranty shall be such replacement or credit.

A claim of defect in materials or workmanship in any Products shall be allowed only when it is submitted in writing within one month after discovery of the defect or after the time the defect should reasonably have been discovered and in any event, within (12) months after the delivery of the Products to the purchaser. This warranty does not apply to perishable items, such as seals, wipers, fuses, filters, etc. No such claim shall be allowed in respect of products which have been neglected or improperly stored, transported, handled, installed, connected, operated, used or maintained. In the event of unauthorized modification of the Products including, where products, parts or attachments for use in connection with the Products are available from Henkel, the use of products, parts or attachments which are not manufactured by Henkel, no claim shall be allowed.

No Products shall be returned to Henkel for any reason without prior written approval from Henkel. Products shall be returned freight prepaid, in accordance with instructions from Henkel.

NO WARRANTY IS EXTENDED TO ANY EQUIPMENT WHICH HAS BEEN ALTERED, MISUSED, NEGLECTED, OR DAMAGED BY ACCIDENT, OR IF THE SYSTEM WAS USED TO DISPENSE ANY LIQUID MATERIAL OTHER THAN HENKEL PRODUCTS. EXCEPT FOR THE EXPRESS WARRANTY CONTAINED IN THIS SECTION, HENKEL MAKES NO WARRANTY OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, WITH RESPECT TO THE PRODUCTS.

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